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We know enough of the cruel Spanish systems of oppression and barbarities. The Spaniards were compelled on the 15th of September, 1821, after some struggle with the natives of Central America, to resign their assumed rights over that country and its people.

Central America divided itself politically into the republics of Honduras, Guatemala, Salvador, Nicaragua, and Costa Rica, all of which abolished slavery as one of their first acts. Honduras, a constitutional republic, is at the present time in a very prosperous condition. Its doors are opened for commerce, and its coasts and interior offer ample rewards for the industrial enterprises of man. The wheel of time, producing changes, is never at rest. M. J. R. FRITZGAERTNER.

GEOLOGY AND PALEONTOLOGY.

On a New Dog from the Loup Fork Miocene.—*AELURODON COMPRESSUS* sp. nov. Represented in my collection by a single mandibular ramus of the left side, and by two rami in the collection of the Museum of Comparative Zoology of Cambridge. The latter have been referred by Professors Scott and Osborn to the *Ae. hyaenoides* Cope (Bulletin Mus. Compar. Zoology, 1890, December), but I find on direct comparison with the type that the species is different. When the heel of the inferior sectorial is placed in position on the first tubercular superior molar of the *Ae. hyaenoides*, the second superior tubercular of the latter does not reach the second inferior tubercular of the *Ae. compressus*; and the posterior border of the superior canine marks the middle of the penultimate inferior premolar of the latter.

The canine in the *Ae. compressus* is rather small, while the sectorial and first tubercular are large. The fourth premolar is one-rooted, and the third has two distinct roots, and is nearly as large as the second. The crowns of these teeth are not preserved in the specimen. The first inferior premolar is not so robust as in the *Ae. saevus* Leidy and other species, but is more compressed. It has a strong posterior cutting lobe, and a low posterior basal cingulum. No anterior basal cusp or cingulum. The heel of the sectorial is as wide as long, and is half as long as the blade. The anterior border of the latter overlaps a little the heel of the first premolar on its inner side. The borders of the heel are of equal elevation. Roots of first tubercular divergent. Root of second tubercular compressed and situated on the oblique base of the coronoid process. The ramus mandibuli is rather shallow

and robust. Its inferior border is nearly straight to below the second root of the first tubercular. It is there strongly curved upwards, in a regular convex outline. There are two mental foramina, one below the second, the other below the third premolars. The alveolus of the external incisor is large, and is directly in front of the canine. The symphysis extends posteriorly to the middle of the pm. iii.

Measurements.—Length of dental series, inclusive of canine (in a straight line), 73 mm.; of premolar series, 30 mm.; of sectorial, 19 mm.; of base of \overline{m}^2 , 10 mm.; of alveolus of \overline{m}^3 , 5.5 mm.; length of heel of sectorial, 6 mm.; width of do., 6 mm. Depth of ramus at pm. iv., 15 mm.; at front of \overline{m}^2 , 18 mm.

From the Loup Fork Miocene of Nebraska.

In illustration of the general characters of the genus *Aelurodon*, I give a restoration of the skeleton of the *Ae. savus* Leidy, from a mounted specimen in my collection. The shaded parts represent the bones in my possession.—E. D. COPE.

On *Dendrophycus triassicus* Newb.—In the last number of the NATURALIST is a paper on "Variation," by Professor Joseph F. James. Much of the matter of that paper is interesting and valuable; but there is one paragraph, on page 1080, to which I decidedly object. It does injustice to me and discredit to the author. The passage is as follows:

"Even in one of the latest monographs published by the U. S. Geological Survey (Vol. XIV.) we observe an inorganic marking (as it appears to us) masquerading under the name of a sea-weed; and under a new name, too, because its brother rill-mark existed some geological ages prior to its own oncoming formations."

This paragraph must refer to my *Dendrophycus triassicus*, since there is no other sea-weed described in the volume, and I remark upon the resemblance which this bears to *Dendrophycus desorii* Lesq., from the Pottsville red shale (Lower Carboniferous).

Now, as Mr. James has probably never seen a specimen of the plant I described, and certainly has never seen the type specimens, he seems to me hardly qualified to express an opinion upon the subject. Besides that, there can be no question that *Dendrophycus triassicus* is a plant, and not a rill-mark. I have been for half a century studying rocks and fossils in the field, and have given special attention to fossil plants; hence I ought to be qualified to decide whether the impression in question is of mechanical or organic origin.

I am familiar with the discussion which has taken place between Dr. Nathorst and the Marquis de Saporta about fossil algæ, tracks, and

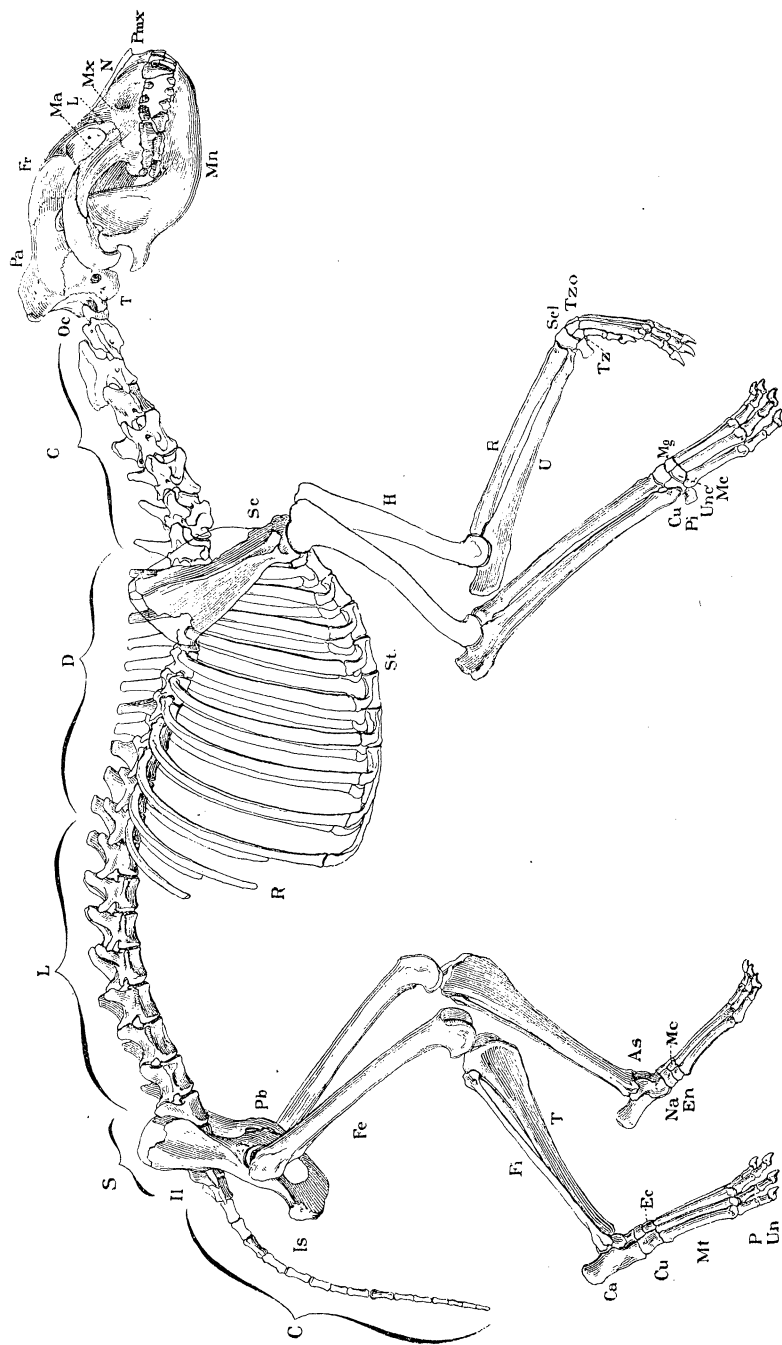
trail-marks, and I know how dogmatically Mr. James has written on the so-called sea-weeds of the Cincinnati group; and yet I can see no reason for doubting that *Dendrophycus* is organic, and no excuse for the confidence with which Mr. James pronounces an opinion upon a subject of which he really knows nothing. Nobody doubts the organic character of *Spirophyton*; but no one can compare *Dendrophycus* with the various species of *Spirophyton* which occur in the Cauda-galli grit, and thence upward into the Coal Measures, without seeing that they must go together. Still further, no one can compare good specimens of *Dendrophycus*—those showing the extremities of the fronds—with sea-weeds of the genus *Desmarestia* without finding so much in common as to be convinced that they are nearly related. This similarity was remarked by Professor Balfour, to whom the plant of the Umbral shales was referred by Professor Rogers. We find in both the same cylindrical, firm, hard and smooth stems, dichotomously forked, becoming at their extremities wire-like, and terminating in slender, acute points. In *Dendrophycus*, as in *Desmarestia*, many of these terminal branches are set with lateral, acute, alternate thorns. Any one who will examine *the specimen*, part of which is figured in Monograph XIV., U. S. Geological Survey, Pl. XXI., Fig. 2, will, I think, regard the theory that it is a rill-mark as untenable. To all those who have been led to such a conjecture by the imperfection of the figures given, or the positive tone of Mr. James's paragraph, I can only say, examine the specimens and that idea will be no longer entertained.

In order to get all the light possible on this subject, I sent some specimens of *Dendrophycus* and *Spirophyton* to Professor W. G. Farlow, of Cambridge, our highest authority in all that pertains to the algæ; he kindly gave me the result of his examination of these specimens in a letter of considerable length, in which he expresses the opinion that they are organic and not of mechanical origin, and that they are the remains of sea-weeds. Had Mr. James waited until he could have seen the specimens of *Dendrophycus*, I venture to say he would never have given expression to the dogmatic and even contemptuous opinion which is contained in the paragraph I have quoted.

J. S. NEWBERRY.

New York, Nov. 7th, 1890.

PLATE XXXII.



Acturadon stewarti Loidy; much reduced. Restored from skeleton in collection of E. D. Cope.
The unshaded portions supplied.

(Opposite page 1088, *Nev., 1890.*)